

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

DUE ON AUG 15 2005

To:
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Reply to:

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

Date of mailing
(date/month/year) 23 March 2005 (23.03.2005)

Applicant's or agent's file reference
17276-1PCT

FOR FURTHER ACTION
See paragraph 2 below

International application no
PCT/CA2004/001837

International filing date (date/month/year)
18 October 2004 (18-10-2004)

Priority date (date/month/year)
16 October 2003 (16-10-2003)

International Patent Classification (IPC) or both national classification and IPC
G01F 23/00, G01F 23/30, G08B 21/00

Applicant **COLLIER, WILLIAM R.**

1. This opinion contains indications relating to the following items :

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/
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Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language which it was filed, unless otherwise indicated under this item.

- ☐ This opinion has been established on the basis of a translation from the original language into the following language __, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of :

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments :

This written has been established based on the international application as follows:

description pages: 1-8 as originally filed

claims: 1-11 as originally filed

drawing pages: 1/6-6/6 containing figures 1-6 as originally filed.

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Box No. V reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	3, 4, 7, 9-11	YES
	Claims	1, 2, 5, 6, 8	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-11	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims	None	NO

2. Citations and explanations : The following prior art documents are considered relevant:

D1: US6337632
D2: US6367096
D3: CA1261940
D4: US5314313
D5: US6414598
D6: US5894611
D7: US6160482

Document D1 discloses a Sump Pump Moisture Alarm which is a self contained apparatus for detecting moisture at or below a floor level. The apparatus having an sound emitter (alarm) or a transmitter to trigger a remote alarm, a power source (battery) and a pair of moisture sensing contacts. When water rises to the level of the contacts a circuit is completed which activates the alarm to warn of a potentially dangerous rising water level. The device can be secured in place with adhesives.

Document D2 teaches a toilet leak and overflow detector having contacts that can be bridged by water (abstract) and the detector or sensor is mounted on the rim of the toilet by an adjustable, flexible clip-on assembly (column 2, lines 55-59) The detector also has a housing including an alarm speaker, a microprocessor and several indicator lights to show an overflow condition and/or a leak and/or a low battery condition (column 3, lines 45-50).

Document D3 teaches a water backup alarm system wherein a self contained level detector having battery power, exposed contacts and circuitry for activating a sound source such that when liquid reaches a predetermined level it comes into contact with the exposed contacts and completes a circuit which activates the sound source to warn of a potentially dangerous or rising liquid level (page 2, lines 8-23, the claims, Fig 2, 3).

Document D4 discloses a water sensing alarm comprised of a housing containing a battery power source, an on/off/test switch, a sound emitter and the associated circuitry (figs 1 and 2). Two contacts (ref char 27 in fig 2) can be spaced at a distance from the housing in a location such that when water rises to a predetermined level it will bridge the gap between the contacts and trigger the alarm (column 2, lines 3-24).

Document D5 describes a portable fluid level detector having a housing containing a power source (battery), a sound source, a battery voltage monitoring circuit and a float operated switch (abstract). The device being easily moved to other locations to monitor other liquid levels. The level at which the float operated switch activates the alarm being adjustable and the battery voltage is continuously monitored (column 2, lines 53-62 and column 3, lines, 36-47).

Document D6 discloses a portable fluid level detector having a housing containing a power source (battery), a sound source, a battery voltage monitoring circuit and a float operated switch (abstract). The device being easily moved to other locations to monitor other liquid levels. The level at which the float operated switch activates the alarm being adjustable and the battery voltage is continuously monitored (column 2, lines 53-62 and column 3, lines, 36-47).

Document D7 discloses a bath tub alarm apparatus having a suction cup for securing it to a bath tub at any desired location. The device having a series circuit consisting of an on/off switch, a sound emitter, a battery and a float responsive switch (Abstract).

Continued on Supplemental Box A

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Box No. VIII

Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made :

Claims 1 and 8 are not in standard two part form and do not satisfy 6.3 (b) (ii).

Claims 1-11 should contain reference characters to identify features found in the drawings to comply with PCT Rule 6.2 (b).

Claim 1 does not satisfy PCT Article 6. The term "the predetermine level" at line 22 of the claim lacks a proper antecedent.

Drawing figures 1-5 do not satisfy PCT Rules 11.13 (a) and (b). The figures are overly dense and dark to the point that individual characteristics or elements can not be identified.

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Supplemental Box A

In case the space in any of the preceding boxes is not sufficient.

Continuation of : Box No. V

Novelty

The features of claim 1 are a fluid level detector having, a housing, a power source (battery) in the housing, a sound emitter in the housing, open contacts emerging out of the housing, and a float displaceable by buoyant forces. The float having a conductive portion for contacting the open contacts and completing a series circuit for actuating the sound emitter.

The closest prior art to claim 1 is deemed to be D7 which discloses a tub alarm apparatus having a series circuit composed of a housing containing a battery power source, a manual on/off switch, a sound emitter and a pair of float responsive switch contacts (abstract). The switch contacts (52, fig. 6) protrude through the water tight housing (46, fig 6) and are positioned such that the conductive strip (40) on the float assembly will bridge the contacts when the water has reached a desired level and the sound source will be activated (column 2, lines 59-67).

In light of D7, claim 1 lacks novelty and does not satisfy PCT Article 33 (2).

Claim 2 also lacks novelty in light of D7 in that the claimed switch being displaceable to activate the fluid level detector is identical to the on/off switch of D7 (column 4 lines 51-52). Therefore, claim 2 lacks novelty and does not satisfy PCT Article 33 (2).

Claims 5 and 6 lack novelty in light of D7 in that the claimed floater means having a floater housing operatively connecting the floater to the housing (claim 6) and the conductive strip (claim 7) has similar features in D7. D7 discloses a portion of the alarm unit separate from the water tight chamber (46) for housing the float support arms (36) and the conductive strip (40). This portion includes support struts for engaging the float support arms (column 5, lines 1-15 and fig. 6). Therefore, claims 5 and 6 lack novelty and do not satisfy PCT Article 33 (2).

Claim 8 contains the features of a fluid level detector and alarm apparatus being connectable to an open top vessel and having a housing with a power source (battery), a sound emitter and a controller all connected by a circuit. The circuit being actuated by the fluid reaching a predetermined level the activating the alarm. The control circuit is capable of monitoring the power level and providing an indication of low power when the battery is running low.

D2 discloses a device for detecting a toilet bowl overflow and/or toilet tank leak where for toilet overflow detection a water level sensor is placed over the rim of the bowl (fig. 1 and column 2, lines 55-59). The sensor is connected to a controller which can cause the water to be shut off to the toilet (column 3, lines 9-11) and also activate a warning sound alarm indicating that too much water is in the bowl (column 3, lines 41-44). The controller is contained in a housing which can have number of other indicators such as LEDs to indicate a overflow, leak or low battery situation (column 3, lines 46-50)

D5 teaches a liquid level detector having a float operated alarm. The detector having a housing containing a power source (battery), a sound emitter, a float operated switch, control circuitry and capable of being connected to home security systems (abstract). With rising liquid level the float can cause the float operated switch to close thereby activating the sound emitter. The control circuitry continually monitors the battery voltage and will trigger the alarm when the battery runs low (column 2, lines 53-61, and column 3, lines 36-47).

Claim 8 lacks novelty in view of either of D2 or D5 and therefore does not satisfy PCT Article 33 (2).

Claims 3, 4, 7 and 9-11 claim a light source to indicate the power is on (claim 3 and 10), the light source also being used to indicate low battery power (claim 4 and 11), the releasable connection of the floater to the housing (claim 7), the displaceable switch (claim 9), are considered to be a novel combination as the particular combination in the order presented are not disclosed any single prior art document. Therefore claims 3, 4, 7 and 9-11 are considered to be novel and satisfy PCT Article 33 (2).

Inventive step

Claims 1, 2, 5, 6 and 8 are considered to lack inventive step and therefore do not satisfy PCT Article 33 (3) as being considered obvious in view of D7 (claims 1, 2, 5 and 6) and either of D2 or D5 (claim 8) for the reasons stated above.

Claims 3 contains the feature of a light source being turned on when the detector is activated. D6 discloses this feature at column 8, lines 37-44 and figure 3. Claim 3 therefor lacks inventive step in view of the combination of D6 and D7 and therefore does not satisfy PCT Article 33 (3).

Claims 4 and 11 contains the features of a controller which monitors the power source and if the power source becomes low the controller causes the light of claims 3 or 10 respectively, to enter a signalling mode to indicate a low power condition. None of the cited references disclose this feature. However, there are many battery operated devices in the market place that have various ways to indicate a low power condition. Some ways are to cause the power indicator light or LED to flash or change colour therefore it would be obvious to incorporate such a feature, if desired, in a similar manner. The feature of claim 4 are considered to be within the capabilities of a skilled person in the art and as such claim 4 does not satisfy PCT Article 33 (3).

The feature of claim 7 wherein the floater housing is releasably connected to the housing unit is neither disclosed or fairly hinted at in the cited prior art. Therefore, claim 7 is considered to involve an inventive step and satisfies PCT Article 33 (3).

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Supplemental Box B

In case the space in any of the preceding boxes is not sufficient.

Continuation of : Box V from Supplemental Box A

Claims 9 and 10 contain the features of a displaceable switch (claim 9) and an indicator light (claim 10). Both these features can be found in D6 (column 7, lines 16-17 and column 9, lines 43-60 and fig.3). Claims 9 and 10 do not involve an inventive step and do not satisfy PCT Article 33 (3).

Industrial applicability

Claims 1-11 are considered to be industrially applicable and satisfy PCT Article 33 (4).